

REMARKS

This paper is submitted in reply to the Office Action dated March 7, 2007. A request for a one month extension of time is being submitted concurrently herewith, and therefore, the period for response extends up to and includes July 9, 2007 (as July 7, 2007 is a Saturday). Reconsideration and allowance of all pending claims are respectfully requested.

In the subject Office Action, claims 1-29 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,812,996 to Rubin et al.

Applicants respectfully traverse the Examiner's rejections to the extent that they are maintained. Applicants have canceled claims 1-2, 8, 12, 14, 22-24, and 29-30, and amended claims 3, 10, 13, 16, and 26. Applicants respectfully submit that no new matter is being added by the above amendments, as the amendments are fully supported in the specification, drawings and claims as originally filed.

As an initial matter, Applicants thank the Examiner for the consideration granted in the telephone interview conducted with the undersigned on June 11, 2007. In the interview, Applicants addressed the rejections based upon Rubin, and proposed amendments to independent claims 3 and 16 to overcome the rejections based upon Rubin. The amendments presented herein represent those proposed amendments, with additional amendments as suggested by the Examiner. It is Applicants' understanding that the Examiner considers the amendments presented herein to overcome the current rejections; however, the Examiner will need to perform a follow-up search prior to allowing the case.

Now turning to the subject Office Action and specifically to the rejection of independent claim 3, this claim generally recites a method of optimizing a database query. The method comprises determining a retrieval status for a resource used by the database query, and generating an access plan for the database query using the determined retrieval status for the resource.

Claim 3 has been amended to incorporate the subject matter of claim 14, and as such, claims 12 and 14 have been canceled, and claim 13 amended, for consistency with the amendments to claim 3. In addition, as per the Examiner's suggestion, claim 14 has been amended to clarify that the retrieval status includes the percentage of a resource that is in working memory, similar to the subject matter of claim 8, and to clarify that the

current retrieval status likewise includes the percentage of the resource that is currently in working memory. Accordingly, claim 8 has also been canceled, and claim 10 amended, for consistency with this additional amendment to claim 3.

Claim 3 therefore has been amended to additionally recite that determining the retrieval status includes determining a percentage of the resource that is resident in a working memory; and that generating the access plan includes generating a plurality of alternate access plans; calculating a cost for each alternate access plan using the determined retrieval status for the resource; and selecting one of the alternate access plans based upon the calculated costs for each alternate access plan. Claim 3 also recites the following additional steps:

- (1) storing the access plan, including associating with the stored access plan a retrieval status assumption for the stored access plan, the retrieval status assumption representing the determined retrieval status used to generate the access plan; and
- (2) in response to a request to execute the stored access plan:
 - determining a current retrieval status for the resource, wherein determining the current retrieval status includes determining a percentage of the resource that is currently resident in the working memory;
 - comparing the current retrieval status with the retrieval status assumption; and
 - selectively generating another access plan for the database query using the current retrieval status based upon the comparison of the current retrieval status with the retrieval status assumption.

As Applicants noted in the aforementioned interview, Rubin does not disclose any process whereby an access plan is stored along with a retrieval status assumption that is based upon a percentage of a resource that is expected to be resident in a working memory when the access plan is executed. Furthermore, Rubin does not disclose determining a current retrieval status for the resource that includes the percentage of the resource that is currently resident in the working memory in response to a request to execute the stored access plan, comparing the current retrieval status with the retrieval status assumption, and

then selectively generating another access plan based upon that comparison. Instead, the passages cited by the Examiner in connection with claims 12 and 14 (cols. 10 and 12 of Rubin) merely disclose an optimizer that provides “hints” to a buffer manager when a query is optimized, so that the buffer manager can operate efficiently when the query is executed. Rubin lacks any disclosure of any mechanism for forcing the generation of another access plan whenever a current retrieval status differs from a retrieval status that is assumed will be in existence when the original, stored access plan is executed. Moreover, Rubin lacks any disclosure of any comparison between an assumed retrieval status and a current retrieval status, when each such retrieval status includes a value representative of a percentage of a resource that is resident in a working memory.

Accordingly, claim 3 as amended is novel over Rubin, and the rejection should be withdrawn. Claim 3 is additional non-obvious over Rubin, as there is no suggestion in the reference, or otherwise in the art of record, of the desirability of modifying Rubin to incorporate any reoptimization of a query based upon differences between the assumed and current retrieval status of a resource used by a query. Indeed, given the “hints” supplied to the buffer manager effectively adapt the manner in which the buffer manager operates when executing a query, Rubin solves a related problem (optimizing the execution of a query) in a completely different way from that recited in claim 3, which effectively adapts an access plan to reflect the current status of a resource. Put another way, claim 3 basically adapts the access plan to the resources, while Rubin adapts the resources to the access plan.

Applicants therefore respectfully submit that claim 3 is novel and non-obvious over Rubin. Reconsideration and allowance of claim 3, and of claims 4-7, 9-11, 13 and 15 which depend therefrom, are therefore respectfully requested.

Next, with regard to the rejection of independent claim 16, this claim generally recites an apparatus that comprises at least one processor, a memory that includes a working memory, and program code resident in the memory and configured to be executed by the at least one processor to optimize a database query by determining a retrieval status for a resource used by the database query, and generating an access plan for the database query using the determined retrieval status for the resource.

Claim 16 has been amended to incorporate the subject matter of claim 24, with claims 22-24 canceled for consistency with the amendments to claim 16. Claim 16

therefore additionally recites that the program code is configured to determine the retrieval status by accessing a resource manager to obtain the retrieval status of the resource, that the resource manager is configured to track a percentage of the resource that is in the working memory, and that the resource manager is further configured to store the percentage of the resource that is in working memory in a header of a persistent copy of the resource.

As Applicants indicated in the interview, Rubin, and in particular the passage at col. 12 cited by the Examiner in connection with the rejection of claim 24, does not disclose storing any percentage value for a resource in a header of a persistent copy of that resource. The cited passage merely discloses the binding of objects and buffer pools to caches, and does not even mention headers or even calculating percentages of resources that are resident in a working memory.

Claim 16 as amended is therefore novel over Rubin, and the rejection should be withdrawn. Claim 16 is also non-obvious over the reference as there is no suggestion in Rubin that would motivate one of ordinary skill in the art to modify Rubin to incorporate a resource manager that stores the percentage of a resource that is in working memory in a header of a persistent copy of that resource. Given also that the conceptual underpinnings of Rubin are based upon adapting the resources in a cache to handle a query, rather than adapting a query to operate efficiently based upon the available resources, Applicants submit that Rubin would not motivate one of ordinary skill in the art to modify the Rubin system to operate in an analogous manner to that recited in claim 16.

Applicants therefore respectfully submit that claim 16 is novel and non-obvious over Rubin. Reconsideration and allowance of claim 16, and of claims 17-21 and 25-28 which depend therefrom, are therefore respectfully requested.

As a final matter, Applicants note that the amendments made herein are being made only for facilitating expeditious prosecution of the aforementioned claimed subject matter. Applicants are not conceding in this application that the originally-claimed subject matter is not patentable over the art cited by the Examiner, and Applicants respectfully reserve the right to pursue this and other subject matter in one or more continuations and/or divisional patent applications.

In summary, Applicants respectfully submit that all pending claims are novel and non-obvious over the prior art of record. Reconsideration and allowance of all pending

claims are therefore respectfully requested. If the Examiner has any questions regarding the foregoing, or which might otherwise further this case onto allowance, the Examiner may contact the undersigned at (513) 241-2324. Moreover, if any other charges or credits are necessary to complete this communication, please apply them to Deposit Account 23-3000.

Respectfully submitted,

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Date

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